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# Techniques for Problem Solving

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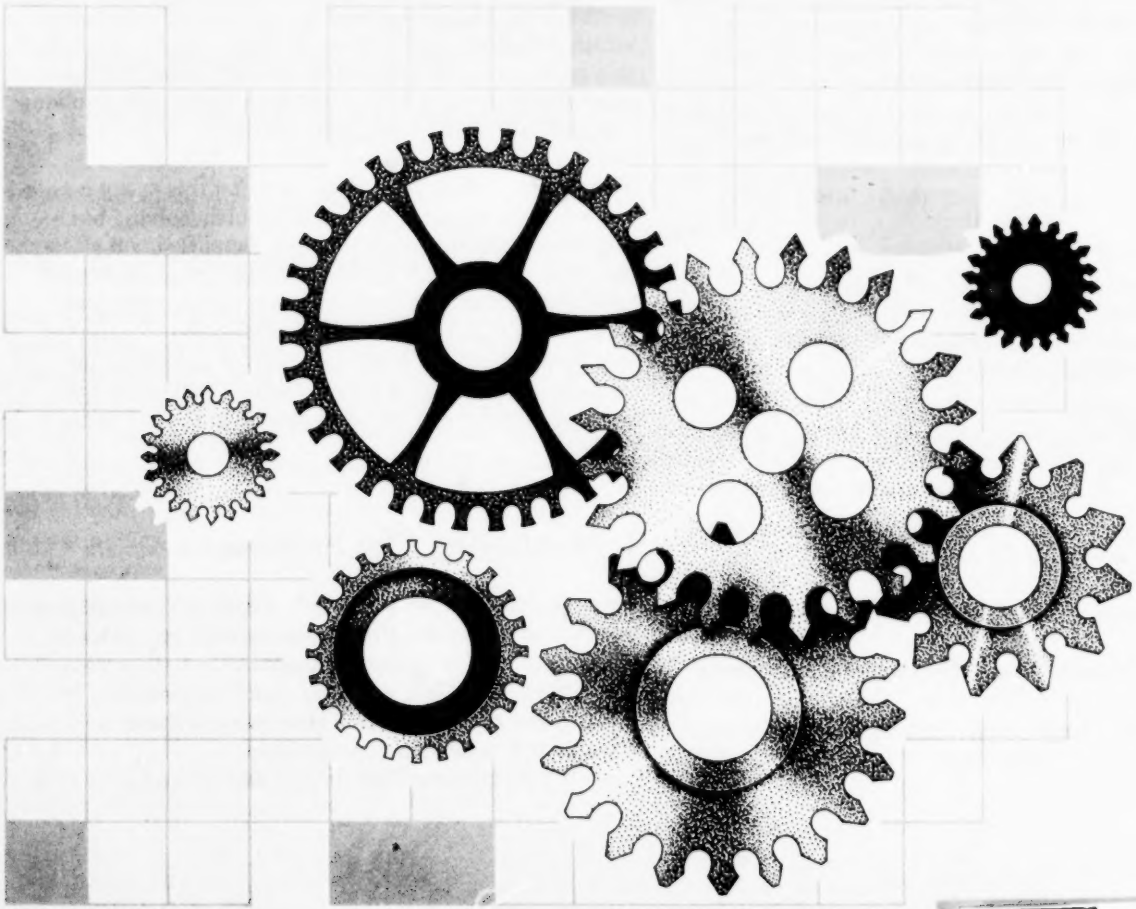

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## Summary

As the owner of your own business you deal with problems on an almost daily basis. How problem solving is approached can dramatically affect the growth of your business. Although you find solutions to your problems, many businessmen and women are not really skilled in the methods of problem solving, and when solutions fail, they fault themselves for misjudgment. The problem is typically not misjudgment but rather a lack of skill.

This publication instructs you in some techniques of problem solving. Crucial to the success of a business faced with problems is your understanding of just what the problems are, defining them, finding solutions, and selecting the best solutions for the situations. This publication explains the following.

**How to identify a problem.**

**How to respond to it.**

**The different techniques and methods used in problem-solving.**

**How to find alternative solutions.**

**How to select the best solution for the situation.**

**Designing a Plan of Action.**

**How to implement the Plan of Action.**

**How to assess the success of the solution and the Plan of Action.**

## Introduction

What is a problem. A problem is a situation that presents difficulty or perplexity. Problems come in many shapes and sizes. For example, it can be:

1. Something did not work as it should and you don't know how or why.

2. Something you need is unavailable, and something must be found to take its place.

3. Employees are undermining a new program.

4. The market is not buying. What do you do to survive?

5. Customers are complaining. How do you handle their complaints?

Where do problems come from? Problems arise from every facet of human and mechanical functions as well as from nature. Some problems we cause ourselves (e.g., a hasty choice was made and the wrong person was selected for the job); other problems are caused by forces beyond our control (e.g., a warehouse is struck by lightning and burns down).

Problems are a natural, everyday occurrence of life, and in order to suffer less from the tensions and frustrations they cause, we must learn how to deal with them in a rational, logical fashion.

If we accept the fact that problems will arise on a regular basis, for a variety of reasons, and from a variety of sources, we can:

1. learn to approach problems from an objective point of view;

2. learn how to anticipate some of them; and

3. prevent some of them from becoming larger problems.

To accomplish this, you need to learn the process of problem solving.

In this publication, we will instruct you in the basic methods of problem-solving. It is a step by step guide which you can easily follow and practice. As you follow this guide, you will eventually develop some strategies of your own that work in concert with the problem-solving process described in this publication.

Keep in mind, though, as you read that this is not a comprehensive analysis of the art of problem-solving but rather a practical, systematic, and simplified, yet effective, way to approach problems considering the limited time and information most business owners and managers have. In addition, some problems are so complex that they require the additional help of experts in the field, so be prepared to accept the fact that some problems are beyond one person's ability, skill, and desire to succeed.

## I. Identifying The Problem

Before a problem can be solved, you must first recognize that a problem exists. Here is where your approach to problem-solving is crucial. You should not allow the problem to intimidate you. You should approach it rationally and remind yourself that every problem is solvable if it is tackled appropriately.

Fear can block your ability to think clearly, but if you:

1. Follow a workable procedure for finding solutions;

2. Accept the fact that you can't foresee everything;

3. Assume that the solution you select is your best option at the time; and

4. Accept the possibility that things may change and your solution fail;

you will then enter the problem-solving process rationally. You should try to view it as an intellectual exercise.

Once you recognize that a problem exists, your next step is to identify the problem. First, you need to discover how the problem occurred. Ask yourself the following questions:

1. Did something go wrong?

2. Did something breakdown?

3. Were there unexpected results or outcome?

4. Is something that once worked no longer working?

Second, you need to know the nature of the problem:

1. Is it people, operational, technical, etc.?

2. Is it with a particular department, product or service, etc.?

3. Is it something tangible or intangible?

4. Is it an external or internal problem?

Third, you need to decide how significant the problem is. Based on the level of significance, you may choose to deal with the problem or not to deal with it. Sometimes what you think is a small problem, when analyzed, proves to be a major problem. The reverse is also true. To determine this, you should ask yourself the following types of questions:

1. Is it disrupting operations?

2. Is it hampering sales?

3. Is it causing conflict among people?

4. Is it an everyday occurrence or is it infrequent?

5. Is is affecting personnel and their productivity?

6. Is it common or unusual?

7. Is it affecting goals, and if yes, which ones?

8. Is it affecting customers, vendors, and any other external people?

Fourth, you should narrow down the type of problem:

1. Is it basically a problem which occurred in the past and the main concern is to make certain that it doesn't occur again?

2. Is it a problem which currently exists and the main concern is to clear up the situtation?

3. Is it a problem which might occur in the future and the basic concern is planning and taking action before the problem arises?

The answer to all of the above questions will help you focus on the true problem. You cannot effectively research the causes of a problem until you have a clear understanding of what the problem is. Sometimes, people spend many hours on what they perceive as a problem only to find out, after seeking the causes, that something else was really the problem.

In order to appropriately identify the problem and its causes, you must do some research. To do this, simply list all the previous questions in checklist form, and keeping the checklist handy, go about gathering as much information as you possibly can. Keep in mind the relative importance and urgency of the problem, as well as your own time limitations. Then interview the people involved with the problem, asking them the questions on your checklist.

After you've gathered the information and reviewed it, you will have a pretty clear understanding of the problem and what the major causes of the problem are. At this point, you can research the causes further through observation and additional interviewing. Now, you should summarize the problem as briefly as possible, list all the causes you have identified, and list all the areas the problem seems to be affecting.

Before proceeding to finding solutions, there is some additional research that could be done. If possible and if warranted, you might wish to find out:

1. What has previously been done in regards to this problem.

2. What have other companies done.

3. What formal knowledge might you need to acquire.

4. What has been learned from past experience.

5. What do experts say about the problem.

## II. Roadblocks to Problem Solving

Many of us serve as our own roadblocks in solving problems. There are a variety of roadblocks to watch for in order to effectively use the technique of problem solving:

1. Watch out for old habits.

2. Check your perceptions.

3. Overcome your fears.

4. Be careful of assumptions.

5. Don't be tied to a problem; try to look at it with detachment.

6. Don't let yourself procrastinate.

7. Control your inclination for reactive solutions.

8. Control your inclination for rash solutions.

9. Avoid emotional responses and always attempt to be rational.

10. Be aware that the nature of a problem can change.

11. Do not skip steps in the problem solving process.

At this point, you are ready to check your understanding of the problem. You've already identified the problem, broken it all down into all its facets, narrowed it down, done research on it, and you are avoiding typical roadblocks. On a large pad (the type you place on an easel), write down the problem, including all of the factors, the areas it affects, and what the effects are. For a better visual understanding, you may also wish to diagram the problem showing cause and effect.

Study what you have written down and/or diagrammed. Call in your employees and discuss your analysis with them. Based on their feedback, you may decide to revise. Once you think you fully understand the causes and effects of the problem, summarize the problem as succinctly and as simply as possible.

## III. How to Find Solutions

There are a number of methods for finding solutions. We will describe five thinking methods below, but we recommend that you use a number of them in finding solutions. The first four methods described are unconventional and more innovative. They allow you the possibility of arriving at a novel solution. The fifth method is a more typical and straightforward method.

1. **Association:** There are three types of associative thinking. This type of thinking is basically a linking process either through similarity, difference, or contiguity. For example, contiguity finds solutions from things that are connected through proximity, sequence, and cause and effect. The process works as follows: List as many parts of the problem you can think of. Then giving yourself a short time limit, list as many words or ideas that have either proximity, sequence, or related cause and effect to the ones you have listed. For example, a contiguous association might be "misplaced work - cluttered desk" (proximity); "misplaced work - rushing" (sequence); "misplaced work - irate customer" (cause and effect).

Associative thinking taps the resources of the mind. It brings into focus options you might not have considered if you stuck to ideas only directly related to the problem. As a result of associative thinking, you might find other relationships embedded in the problem that will lead to a better solution.

2. **Analogy:** This thinking method is a way of finding solutions through comparisons. The process is based on comparing the different facets of the problem with other problems that may or may not have similar facets. An analogy might go like this: "Employees have been coming in late to work quite often; how can I get them to be at work on time? This to me is like soldiers being late for a battle. Would soldiers come late to a battle? Why not?" By comparing the situation of workers to the situation of soldiers, you may find a solution for a way to motivate employees to come to work on time.

3. **Brainstorming:** This thinking method is based on a free, non-threatening, anything goes atmosphere. You can brainstorm alone or with a group of people. Most often a group of people from diverse backgrounds is preferable. The process works like this: The problem is explained to the group and each member is encouraged to throw out as many ideas for solutions as he or she can think of no matter how ridiculous or far-fetched they may sound. All the ideas are discussed among the group, revised, tossed

out, expanded, etc. based on the group's analysis of them. Based on the group's grasp of the effectiveness of each idea, the best ones are selected for closer review. For example, the group of people might throw out for consideration any thoughts they might have on how to increase sales or improve profits.

4. **Intuition:** This mode of thinking is based on hunches. It is not, as some think, irrational. Intuition or hunches are built on a strong foundation of facts and experiences that are buried somewhere in the subconscious. All the things you know and have experienced can lead you to believe that something might be true although you've never actually experienced that reality. Use your intuition as much as possible but check it against the reality of the situation.

5. **Analytical Thinking:** This thinking method is based on analysis. It is the most conventional and logical of all the methods and follows a step by step pattern.

a. Examine each cause of the problem. Then for each cause, based on your direct knowledge and experience, list the solutions that logically would seem to solve the problem.

b. Check the possible solutions you arrive at with the research you have compiled on how the problem was solved by others.

Using each thinking technique, search for solutions. Keep a running list of all of them, even the ones that seem far out, too simple, or even impossible. The effect of this is to give you a rich pool of ideas that will lead you to the best solution.

## IV. Sorting Out the Best Solution

Go through your long list of solutions and cross-out those that obviously won't work. Those ideas are not wasted, for they impact on those ideas that remain. In other words, the best ideas you select may be revised based on the ideas that wouldn't work. With the remaining solutions, use what is called the *"Force Field Analysis Technique."* This is basically an analysis technique which breaks the solution down into its positive effects and negative effects. To do this, write each solution you are considering on a separate piece of paper. Below the solution, draw a line vertically down the center of the paper. Label one column advantages and one column disadvantages. Now, some more analytical thinking comes into play. Analyzing each facet of the solution and its effect on the problem, listing each of the advantages and disadvantages you can think of.

One way to help you think of the advantages and disadvantages is to role-play each solution. Call in a few of your employees and play out each solution. Ask them for their reactions. Based on what you observe and on their feedback, you will have a better idea of the advantages and disadvantages of each solution you are considering.

After you complete this process for each solution, select those solutions which have the most advantages. At this point, you should be considering only two or three. In order to select the most appropriate solution, you should check each solution against the following criteria:

1. Cost effectiveness;

2. Time constraints;

3. Availability of manpower, material, etc.;

4. Your own intuition.

Before you actually implement the solution, you should evaluate it. Ask yourself these questions:

1. Are the objectives of the solution sound and clear and not complex?

2. Will the solution achieve the objectives?

3. What are the possibilities it will fail and in what way?

## V. The Plan of Action

Finding the solution does not mean the problem is solved. Now, you need to design a plan of action so that the solution gets carried out properly. Designing and carrying out the plan of action is equally as important as the solution. The best solution can fail because it is not implemented correctly. When designing the plan of action, consider the following:

1. Who will be involved in the solution;

2. Who will be affected by the solution;

3. What course of action will be taken;

4. How should the course of action be presented to company employees, customers, vendors, etc.;

5. When will it happen - the time frame;

6. Where will it happen;

7. How will it happen;

8. What is needed to make it happen.

Design a plan of action chart including all the details you need to consider to carry it out and when each phase should happen. Keep in mind, though, that the best plans have setbacks for any number of reasons — from a key person being out for illness to a supplier shipping material late. So remember that your dates are only target dates. Solutions and plans of action must be flexible. Expect some things to be revised.

## VI. Evaluating the Plan of Action

Before you implement the plan of action, you should analyze it to see if you've considered as many of the variables as possible. Some questions you might ask yourself are:

1. Is there adequate staff to carry it out?

2. Is the plan detailed yet simple enough for those affected to know what to expect and how to carry it out?

3. Will it embarrass anyone — manager, employee, customer, vendor, etc.?

4. Is the time frame realistic and feasible?

5. Are there special conditions which may have been overlooked?

6. Who should be informed?

7. Who should be involved?

8. Who should be responsible for each aspect and/or phase?

9. Is the plan of action cost effective?

10. Does the plan have a public relations component? (Public relations is further explained in the next section.)

## VII. Obstacles You May Encounter

There are a number of obstacles you may encounter when you implement your plan of action. It is, therefore, advisable that you devise ways to overcome them. Try not to allow obstacles to prevent you from reaching your goals. Some obstacles to watch for are:

1. Not receiving material and/or equipment on time;

2. Other situations which might arise and deflect your attention from this problem;

3. Procrastination;

4. A power struggle among managers and/or employees;

5. Resistance to change — a natural human condition.

Resistance to change and company-wide acceptance is typically the biggest obstacle. The best way to overcome them is to build a public relations component into your plan of action. The key question to ask yourself is, "How will I get my people to support the solution and make it work?" Some effective methods for accomplishing this are:

1. Have as many managers and employees involved in the problem solving process as possible.

2. Advertise the problem and solution to your employees through memos, newsletters, and posters, showing the advantages and disadvantages of the solution but proving it is better than the conditions which currently exist.

3. Establish a schedule of meetings where different groups of employees can be exposed to the solution and ask them for their feedback.

4. If necessary, develop a training program so that managers and employees feel competent in carrying out the solution.

5. Involve key leaders who wield impact and influence others.

The key to a successful PR campaign is involving, as much as possible, the people who are affected by the problem. The benefits of doing so is that they will understand the problem better and *why* the solution is an effective one. The result will be that they will be more likely to not only support your solution but also make sure that it works. Many times the solutions we select for problems don't work because employees sabotage them, not because they are not inherently good solutions. Employees may resist change, especially if they feel threatened. Involving employees will assuage their fears.

## VIII. Simulating the Solution/ Plan of Action

Before you implement the plan of action on a full scale, you should select a small group of managers and employees and role play the solution in the work setting. Observe the group as they carry out the solution and take note of:

1. How they carry out the solution;

2. Their reactions to the solution;

3. Their understanding of the solution;

4. The effectiveness of the tools they are using in carrying out the solution;

5. Their resistance to change and reverting back to the previous behaviors.

Based on what you observe, you may need to revise some of your plans.

## IX. Successful Implementation

To assure the successful implementation of your solution and plan of action, remember the following:

1. Prepare your staff well in advance;

2. Train your staff well in advance;

3. Order equipment, material, etc., well in advance;

4. If necessary, hire new staff and do so well in advance;

5. Use PR at every meeting and in memos as much as possible;

6. Evaluate the effects of each phase as it is implemented and make the necessary adjustments;

7. Attempt to remain flexible and open-minded.

## Evaluating the Success of Your Solution

As each phase of your plan of action is implemented, you should ask yourself whether your goals were achieved, how well they were achieved, and did it work smoothly. To check your own perceptions of the results, get as much feedback as possible from your managers and employees. What you may think is working may not be working well in the eyes of your people. Always remember that they are one of your most valuable tools in successfully carrying out your solution.

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